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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,590	07/29/2002	Abdelaziz Ikhlef	122667	5121
23413	7590	06/23/2004	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			SUNG, CHRISTINE	
			ART UNIT	PAPER NUMBER
			2878	

DATE MAILED: 06/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/064,590

Applicant(s)

IKHLEF, ABDELAZIZ

Examiner

Christine Sung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-15 and 17-24 is/are rejected.
- 7) ☒ Claim(s) 8, 16 and 25 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 9/02, 12/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6, 9-12, 14, 17-21 and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Cueman (US Patent 5,059,800).

Regarding claim 1, Cueman et al. discloses a radiation detector element assembly (Figure 2) comprising:

A scintillator (element 23) and a photosensor (element 26), said scintillator including a first surface (element 16) proximate to a photosensor (see figure 2) and a second surface (element 12) distal to said first surface and receptive to a radiation beam (see figure 2); and a side portion of the scintillator (element 23) configured to intercept impingement of a radiation beam thereon and reduce a response of said photosensor to said impingement on said side portion. Cueman discloses scintillator elements that are evenly spaced apart with a wide and short end of the scintillator. Inherently, the shape and configuration of the scintillator elements create a side portion (see figure 2, side of scintillator element 23) that is configured to intercept impingement of a radiation beam upon the side portion and reduce a response of the photosensor to the impingement on the side portion.

Regarding claim 9, Cueman discloses a method of detecting and incident radiation beam comprising: receiving radiation beam incident upon a second surface (element 12) of a

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scintillator (element 23), said scintillator including a first surface (element 16) proximate to a photosensor (element 26), and a second surface (element 12) distal to the first surface. Cueman discloses scintillator elements that are evenly spaced apart with a wide and short end of the scintillator. Inherently, the shape and configuration of the scintillator elements create a side portion (see figure 2, side of scintillator element 23) that is configured to intercept impingement of a radiation beam upon the side portion and reduce a response of the photosensor to the impingement on the side portion.

Regarding claim 17, Cueman discloses a radiation detector array (Figure 2), for use in imaging systems, comprising a scintillator array (Figure 1, element 10), disposed in an operable configuration with a photosensor array (Figure 2, elements 18), said scintillator array including a plurality of scintillators (Figure 2, element 23), and said photosensor array including a plurality of photosensors (elements 28); each scintillator of said plurality of scintillators including a first surface (element 16) proximate to a photosensor (element 28) of said plurality of photosensor and a second surface (element 12) distal to said first surface and receptive to a radiation beam (element 14). Cueman discloses a method of detecting and incident radiation beam comprising: receiving radiation beam incident upon a second surface (element 12) of a scintillator (element 23), said scintillator including a first surface (element 16) proximate to a photosensor (element 26), and a second surface (element 12) distal to the first surface. Cueman discloses scintillator elements that are evenly spaced apart with a wide and short end of the scintillator. Inherently, the shape and configuration of the scintillator elements create a side portion (see figure 2, side of scintillator element 23) that is configured to intercept impingement of a radiation beam upon the side portion and reduce a response of the photosensor to the impingement on the side portion.

Regarding claim 18, Cueman discloses a means for detecting an incident radiation beam (Figure 2, element 14), comprising: means for receiving a radiation beam incident upon a second surface (Element 12) of a scintillator (element 23), said scintillator including a first surface (element 16) proximate to a photosensor and a second surface (element 12) distal to said first surface. Cueman discloses a method of detecting and incident radiation beam comprising: receiving radiation beam incident upon a second surface (element 12) of a scintillator (element 23), said scintillator including a first surface (element 16) proximate to a photosensor (element 26), and a second surface (element 12) distal to the first surface. Cueman discloses scintillator elements that are evenly spaced apart with a wide and short end of the scintillator. Inherently, the shape and configuration of the scintillator elements create a side portion (see figure 2, side of scintillator element 23) that is configured to intercept impingement of a radiation beam upon the side portion and reduce a response of the photosensor to the impingement on the side portion.

Regarding claims 2, 10 and 19, Cueman further discloses that the second surface (element 12) is larger than the first surface (element 16). It is inherent that this configuration will cause part of the radiation beam to impinge upon the side portion and reduce the response of the photosensor.

Regarding claims 3, 11 and 20, Cueman discloses that the radiation beam is an x-ray beam (column 1, lines 9-12).

Regarding claims 4, 12 and 21, Cueman discloses that the side portion includes a flange (Figure 3).

Regarding claims 6, 14 and 23, Cueman discloses that the side portion is tapered outward (see figure 2) from the first surface (element 16) to the second surface (element 12).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 7, 13, 15, 22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cueman (US Patent 5,059,800).

Regarding claims 5, 13 and 22, Cueman discloses the limitations set forth in the claim 4, 12 and 21 respectively. Further, it would have been obvious to one having ordinary skill in the art to have provided that the flange would be configured to a thickness and depth to intercept the radiation beam for a selected focal spot because such scintillation specifications are chosen for properties such as stopping power or resolution. Therefore, since one of ordinary skill in the art would configure the thickness and depth to intercept the given radiation beam in order to manipulate certain properties (stopping power and resolution) a given focal spot motion will also be determined.

Regarding claims 7, 15 and 24, Cueman discloses the limitations set forth in claims 1, 9, and 18, respectively. Further Cueman discloses a tapered scintillator (figure 3) with a stepwise cut from the second surface to the first surface (Figure 3). It is obvious to one of ordinary skill in the art that the radiation beam does not impinge on another side portion in the vicinity of the photosensor (figure 2, element 18) for a given focal spot motion. Since Cueman does not specify a range of focal spot motion, the stepwise configuration of the scintillation element in figure 3,

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inherently has a focal spot that causes the flange portion to not impinge on another side portion in the vicinity of the photosensor.

***Allowable Subject Matter***

5. Claims 8, 16 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter: None of the prior art of record specifically discloses defining the size of the first surface of the scintillator by a range of focal spot motion. Conventional art defines the size of the first surface of the scintillator by the size of the photosensor.

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. US Patent 4,234,792- this reference discloses a radiation detector with a tapered scintillator.
- b. US Patent 4,323,925- this reference discloses an image sensor with a similar tapered configuration using a fiber optic plate.
- c. US Patent 5,241,180- this reference discloses a detection device with tapered scintillator crystals.
- d. US Pre Grant Publication 2002/0067796- this reference discloses an image detector with tapered crystals as disclosed in the instant application but cannot be applied because it is commonly owned.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Sung whose telephone number is 571-272-2448. The examiner can normally be reached on Monday- Thursday 7-5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christine Sung  
Examiner  
Art Unit 2878

CS

  
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PRIMARY EXAMINER  
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